THE AMERICAN CHEMICAL SOCIETY.

The April meeting of the American Chemical Society was held on the evening of the 1st inst. There not being a quorum present at eight o'clock, the business of the Society was postponed, and the reading of Dr. A. R. Leed's paper on "Anilo-metallic Compounds" took place. The aniline compounds of Aluminum, Antimony, Barium, Calcium, Cadmium, Chromium, Copper, Cobalt, Bismuth, Mercury, Tin and Zinc were described; how they were prepared and their important characteristics noted. Aniline will not combine with any monivalent element. This paper was a preliminary report of work which Professor Leeds proposes to extend and ultimately publish when he shall have obtained sufficient data. The second paper on the "Action of Concentrated Sulphuric Acid on Lead Alloys" was read by Lucius Pitkin, one of the most talented young chemists of the School of Mines, N. Y. In a paper presented by Mr. James Napier before the Glasgow Philosophical Society, it was held that impure lead was preferable to the pure article for use when in contact with sulphuric acid (see *Chemical News*, Dec. 23, 1880). Mr. Pitkin tried the action of both hot and cold concentrated acids on some forty samples of lead and its alloys. The alloys treated were of lead with antimony, tin, bismuth, cadmium, silver and zinc. In the case of cold acid, 2 sq. in. of each alloy and a sample of pure lead were exposed for 24 hours to the action of 10 c.c. of sulphuric acid at 20° C.; on hot acid the length of exposure was one hour, and his results are best given in the following table, with which his paper terminated.

Average solubility or liability to formation of sulphate of the alloys in terms of lead.

		Cold Acid.	*Hot Acid.*
Lead		1.	1.
"	alloyed with Antimony	.81	2.75
"	" Tin	1.42	.75
"	" Bismuth	1.10	7.69
"	" Cadmium	.86	1.10
"	" Silver	.87	.93
"	" Zinc	1.53	1.10

Considerable discussion followed Mr. Pitkin's paper, in which Dr. Gallatin, Dr. Geyer, Dr, Alsberg, Mr. Herreshoff and Dr. Squibb participated.

Mr. A. E. Hoppick was then elected a regular member of the Society, and Messrs. C. P. Sawyer, A. H. Van Sinderen, and Otto Grote, were proposed for election. Mr. J. H. Stebbins was elected to fill the vacancy caused by the resignation of Dr. Gallatin, as Recording Secretary, and Mr. Herreshoff elected to the positien on the Committee on Nominations which Mr. Stebbins had held.

Mr. Casamajor and Dr. Alsberg reported on behalf of the Committee for the Annual Dinner, and announced that the fifth anniversary dinner of the American Chemical Society would take place at Sieghörtner's restaurant, on Monday, April 18, at 6 P. M.

M. B.

ON SOME PHENOMENA PRESENTED BY VORTEX-RINGS.

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1. If one vortex-ring strikes another vortex-ring upon the edge the two rings will bound away from each other as though they were solid elastic bodies, each one vibrating as it recedes.

2. If one vortex-ring overtakes another ring, both moving in the same straight line, and both are of the same size, then the forward one will expand in diameter, and the latter will contract in diameter, and will go through the forward one when each will return to its original dimension. At the same time the forward one will have its velocity retarded while the other will have its velocity increased, and it may overtake the forward one and go through it.

3. If a vortex-ring passes near any light object as, for instance, a silk thread suspended, or better still a small cloud of smoke or ammonium chloride dust, the latter will be seen to be apparently repelled from the front of it but attracted and drawn into the ring from the rear.

4. If a vortex-ring be projected parallel with any surface, and at not too great a distance from the surface, the ring will move in a curved path towards it and strike it.

5. If two vortex-rings are projected so as to start in parallel lines near to each other they will approach each other until they touch, when they may be either broken or else bound away from each other as in the first case above.

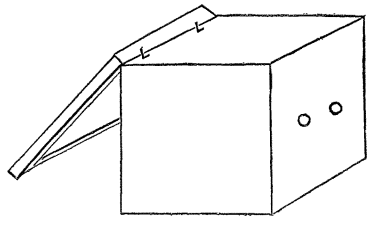
6. If two vortex-rings having the same rate of rotation be started in lines parallel to each other and at not too great a distance apart, they will not only approach each other but *they will combine to form one ring* which continues to move in the same direction.

7. The combination is effected by the breaking of each at the point of contact, and the welding of the opposite parts of each ring to form one ring with twice the diameter.

8. Three rings may in like manner be combined into one.

9. The structure of the vortex-ring is concentric, that is, a cross section of a ring generally shows a series of several concentric circles, with a hollow centre. The middle of the ring appears to be a cylindrical unoccupied space.

As experimental work with such rings is very entertaining as well as suggestive of the behavior of the real atoms of matter, it may be well to give the simple instructions necessary to perfect success.



Provide a cubical box with dimensions about a foot each way, having a swinging back frame, over which is stretched a piece of stout cotton cloth. On the opposite side two or more inch-holes may be bored two inches apart. Pour some strong hydrochloric acid into one saucer, and some strong ammonia water into another. Set the two into the box, and shut down the door. The box will at once be filled with the white fumes, and a tap with the finger upon the cloth back, will send out well-formed rings.

The phenomena 1 to 5, can best be seen by employing only one of the holes, so as to form but a single ring. By striking the cloth a little harder the second time than the first, the second ring may be made to overtake the first, and if it is desirable to exhibit the rings to a room full of people, there should be but a single hole in front, and that one about three inches in diameter; the rings can then be projected with force enough to make them go ten or fifteen feet from the box.

The other phenomena can best be studied by using only small holes, and tapping gently. The rings will come together within a few inches of the box. It seems to be essential that the two rings that combine, should have the same *rate of rotation*, a matter easily secured by forming the two at once in the above described way, but well nigh impossible, if one is formed after the other.

It is sufficient now to remark that the new phenomena described above simulate in a very striking way, what we call gravitation and chemism.